

217791US-0X CONT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF: :
SATOSHI HIRAHARA ET AL : ATTN: APPLICATION DIVISION
SERIAL NO: NEW APPLICATION :
FILED: HERewith :
FOR: ACTIVATED CARBON FOR USE IN
ELECTRIC DOUBLE LAYER
CAPACITORS

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to examination on the merits, please amend this application as follows.

IN THE SPECIFICATION

Page 1, at the top of the page, delete

Description

and insert therefor:

TITLE OF THE INVENTION

under the title, delete

Technical Field

and insert therefor:

Field of the Invention

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line 15 from the bottom of the page, delete

Background Art

and insert therefor:

Description of the Background.

Page 6, after line 6 from the bottom of the page, insert:

SUMMARY OF THE INVENTION.

Page 7, after line 3, delete Disclosure of the Invention and insert therefor:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

IN THE CLAIMS

Please cancel Claim 3 without prejudice and insert therefor the following new Claims:

10. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, wherein the activated carbon is obtained by subjecting a coconut shell carbonization product to stream activation.

11. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, wherein an oxygen content per g. of the activated carbon is 1 mg to 20 mg.

12. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, wherein a rest potential versus a lithium electrode is 2.85 V to 3.03 V in a non-aqueous electrolytic solution.

13. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, wherein a pore volume thereof is from 0.07 to 0.13 cm³/g.

14. (New) The activated carbon for electric double layer capacitors as claimed in claim 13, wherein a pore volume thereof is from 0.08 to 0.12 cm³/g.

15. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, wherein said steam activation comprises heat-treating pulverized coconut shell in an inert atmosphere containing steam at a temperature of from 800°C to 1,300°C.

16. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having a specific surface area of from 2024-2351 m²/g.

17. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having a total pore volume of 1.00-1.20 cm³/g.

18. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having an average pore diameter of 2.00-2.03 nm.

19. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having a pore volume of pores having a 5.0-30.0 nm diameter of from 0.075-0.130 cm³/g.

20. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having an amount of oxygen contained of from 1.8-8.1 mg/g.

21. (New) The activated carbon for electric double layer capacitors as claimed in claim 1, having a spontaneous potential of 2.99-3.02.

22. (New) An electric double layer capacitor, comprising the activated carbon of claim 1.

23. (New) A method of making an activated carbon, which comprises the steps of:

- a) carbonizing coconut shell, thereby producing a carbonization product; and
- b) activating the carbonization product.

24. (New) The method of claim 23, wherein said activating is effected by gas activation.

25. (New) The method of claim 23, wherein said activating is effected by chemical activation.

26. (New) The method of claim 24, wherein said gas activation is effected by steam activation.

27. (New) The method of claim 23, which further comprises prior to said step a), pulverizing said coconut shell.

28. (New) The method of claim 23, wherein said carbonizing in step a) is effected under an inert atmosphere.

29. (New) The method of claim 23, wherein said activating in step b) is effected by heat-treating the carbonization product of step a) at a temperature of 800°C to 1,300°C in an inert gas comprising nitrogen, argon or a combustion exhaust gas containing steam.

REMARKS

Claim 3 has been canceled. New Claims 10-29 have been added. Hence, Claims 1, 2 and 4-29 are now active in this case.

All of the above amendments are fully supported by the claims and disclosure as originally filed. No new matter has been added.

Accordingly, it is believed that this application is now in condition for examination on the merits.

Favorable consideration is earnestly solicited.

Respectfully submitted,

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Amendment Filed on: 01/09/02

IN THE SPECIFICATION

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[Disclosure of the Invention]

and insert therefor

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

IN THE CLAIMS

Claim 3 (Canceled).

Claims 10-29 (New).--